

What is claimed is:

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1. An isolated protein comprising the amino acid sequence as shown in SEQ ID NO: 2.
  2. An isolated protein selected from the group consisting of the following (a) and (b):
    - (a) a protein comprising the amino acid sequence as shown in SEQ ID NO: 4; and
    - (d) a protein which comprises the amino acid sequence as shown in SEQ ID NO: 4 having deletion, substitution or addition of one to ten amino acids within the region from position 1 to position 400 and which has RNA binding activity.
  3. An isolated gene encoding the amino acid sequence as shown in SEQ ID NO: 2.
  4. An isolated gene encoding a protein selected from the group consisting of the following (a) and (b):
    - (a) a protein comprising the amino acid sequence as shown in SEQ ID NO: 4; and
    - (d) a protein which comprises the amino acid sequence as shown in SEQ ID NO: 4 having deletion, substitution or addition of one to ten amino acids within the region from position 1 to position 400 and which has RNA binding activity.
  5. An isolated gene comprising a DNA selected from the group consisting of the following (a) and (b):
    - (a) a DNA consisting of the nucleotide sequence as shown in SEQ ID NO: 1; and
    - (b) a DNA which hybridizes to the nucleotide sequence as shown in SEQ ID NO: 1 under stringent conditions and which encodes a protein having RNA binding activity.
  6. An isolated gene comprising a DNA selected from the group consisting of the following (a) and (b):
    - (a) a DNA comprising a nucleotide sequence spanning from position 154 to position 1836 of SEQ ID NO: 3; and
    - (b) a DNA which hybridizes to a DNA comprising a nucleotide sequence spanning

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from position 154 to position 1836 of SEQ ID NO: 3 and which encodes a protein having RNA binding activity.

Sub 62 7. A recombinant vector comprising the gene according to any one of claims 3 to 6.

8. A transformant comprising the recombinant vector according to claim 7.

9. A method of producing an RNA-binding protein comprising culturing the transformant according to claim 7 and recovering the RNA-binding protein from the resultant culture.

Sub 63 10. An antibody against the protein according to claim 1 or 2.

11. A pharmaceutical composition for regulating neuronal functions, comprising the protein according to claim 1 or 2.

12. A therapeutic agent for neurological diseases comprising the protein according to claim 1 or 2 as an active ingredient.

13. A pharmaceutical composition for regulating neuronal functions, comprising the gene according to any one of claims 3 to 6.

14. A therapeutic agent for neurological diseases, comprising the gene according to any one of claims 3 to 6.

15. A reagent for detecting a Synaptotagmin-binding and yet RNA-binding protein, comprising the antibody according to claim 10.

Sub 64 16. A reagent for detecting Synaptotagmin, comprising the protein according to claim 1 or 2 and/or the antibody according to claim 10.

17. A method of detecting an RNA-binding protein, comprising:

- (a) fractionating a sample;
- (b) reacting the resultant fractions with the antibody according to claim 10 which has been labeled; and
- (c) detecting a signal from the resultant reaction products.

18. The method according to claim 17, wherein the sample is a cell lysate or a cellular fraction thereof.

19. A method of detecting Synaptotagmin, comprising:

- (a) fractionating a sample;
- (b) reacting the resultant fractions with the protein according to claim 1 or 2 which has been labeled;
- (c) reacting the reaction products obtained in step (b) above with the antibody according to claim 10 which has been labeled; and
- (d) detecting a signal from the reaction products obtained in step (c) above.

20. The method of claim 19, wherein the sample is a cell lysate or a cellular fraction thereof, or a cell lysate containing a fusion protein composed of Synaptotagmin and glutathione-S-transferase.

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